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ABSTRACT

This paper presents a research model based on an alumnae/alumni study designed to predict career success from personal background characteristics, career experiences, career opportunities, and attitudes. Results from 336 business major undergraduate and graduate alumnae or alumni reveal that those most likely to achieve career success were male, were married, had children, worked for a small company, and were entrepreneurs. Findings also show that those who had opportunities in negotiating business deals, broad management experience, and responsibility for major organizational assignments, as well as those who were invested in their careers, had high achievement motivation and risk orientation, were most likely to succeed. The research model provides a framework for designing studies that survey alumni or alumnae and identifying predictors of success among graduates in other fields. (Contains 3 figures, 9 tables, and 14 references.) (Author/SLD)

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Discovering Success Strategies Through Alumnae/i Research

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ABSTRACT

Discovering Success Strategies Through Alumnae/i Research

This paper presents a research model based on an alumnae/i study designed to predict career success from personal background characteristics, career experiences, career opportunities, and attitudes. Results from 336 business major undergraduate and graduate alumnae/i revealed that male alumni; who were married; had children; worked for a small company; and were entrepreneurs were most likely to achieve career success. Findings also showed that those who had opportunities in negotiating business deals, broad management experience, and responsibility for major organizational assignments, as well as those who were invested in their career, had high achievement motivation and risk orientation appeared most likely to succeed.

Introduction

This paper presents an alumnae/i research study as a model for analyzing alumnae/i career development and enhancing the impact of higher education on alumnae/i career success. Primary goals of this study were to explore alumnae/i career paths; to examine the relationships between personal background characteristics, career experiences, opportunities, attitudes and personality characteristics and career success; and to enhance higher education's effectiveness in preparing graduates for career success.

The major research questions of the study were:

- How do personal background characteristics affect career success?
- What effect do career experiences, strategies and opportunities have on career success?
- Do certain attitudes and personality characteristics promote career success?
- How can higher education enhance graduates' potential for career success?

Context for the Study. This study was sponsored by and conducted for a private business college in the northeast section of the United States. The College is committed to being an internationally recognized leader in management education by educating students to be innovative leaders capable of initiating, implementing and managing change. Field experience is a major part of the education, and the College collaborates with domestic and international companies to create valuable internships for students. The College enrolls approximately 1700 undergraduate students and 1600 graduate students from most of the 50 states, many U.S. territories, and about 70 other countries.

Review of the Literature

Theoretical literature on career development, research on managerial career advancement, and empirical studies of alumnae/i provided a basis for developing the conceptual framework,

research questions and measures employed in the present study. Alumnae/i studies related to business careers and management education were particularly useful.

Theoretical Foundations for Career Studies

Looking through different lenses, Schein (1974), Kotter (1995), Tharenou (1997) and Solymossy (1998) have identified individual and organization variables significantly related to career success. Each author offers a unique perspective in naming the factors and analyzing their interaction. In a study of management school graduates from MIT, Schein (1974) analyzed the interaction of external factors, such as career events, and internal factors, such as personal values, to explain alumnae/i career paths. Based on this research, he developed the concept of career anchor, a motivational/attitudinal/value syndrome which guides and constrains an individual's career and reflects both individual and societal influences. The five career anchors identified include: (1) managerial competence, (2) technical/functional competence, (3) organizational security, (4) creativity, and (5) autonomy. These anchors guide an individual's career and choice of congruent career opportunities. They may be used to explain differences in career motivation and offer insight into variation in individual occupational aspirations.

The managerial competence anchor includes three dimensions: interpersonal competence - the ability to influence; analytical competence - skill in solving conceptual problems with incomplete information; and emotional stability - the capacity to be stimulated by emotional and interpersonal crises. The technical/functional competence anchor describes someone for whom the challenge of work is the primary motivating factor. The security anchor reflects a concern to stabilize one's career by linking it to the organization. In contrast, the autonomy anchor defines people whose primary concern is their own autonomy and independence. Finally, the creativity anchor characterizes someone whose primary desire is to create something new.

Individuals were classified into career anchor groups, based on reasons for career choices, motivation for job changes, and objectives in life. Analyses of the relationship of career anchor groups to career success revealed that, in pure income terms, the managerial competence group was the most successful. If one includes assets, the successful entrepreneurs were similarly high. In comparison, the technical functional competence and security group comprise the average and the autonomy group was the lowest in terms of career success, measured by income.

Kotter (1995) followed the career progress of a sample of 115 MBA's who graduated from Harvard in 1974 and completed yearly questionnaires between January, 1975 and 1992. He compared data for these alumnae/i with data for a more diverse group of individuals and concluded that globalization of markets and competition have rendered the old career paths and rules for career success ineffective. This research suggests that to be successful, one must adhere to the following new rules: not rely on convention; monitor globalization and its consequences; move toward the small and entrepreneurial; lead as well as manage; wheel and deal if possible; increase one's personal competitive drive; and make a commitment to lifelong learning. Kotter proposed that in order to understand why some people succeed, one needs to understand their career path; the economic environment in which they work; the specific ways in which they have found career opportunities; the kind of people they are; and their willingness and ability to continue to learn and grow.

Tharenou (1997) examined the causes of career advancement of supervisors, managers, executives and chief executive officers, in a comprehensive review of empirical research published since 1990. Her analyses identified both career experiences and individual human traits as significant predictors of career advancement and success. The influential career experiences or "opportunity structures" included successful performance in critical functional

areas; experience on high visibility projects; experience in corporate headquarters; breadth of experience in several functional areas; broad general management experience; and major organizational assignments and projects on specific organizational needs. The individual attributes found to be related to managerial career advancement were ambition, intelligence, career motivation, high achievement motivation, desire to manage, and high work involvement.

Solymossy (1998) presents a multidimensional framework for understanding the relationship of entrepreneurship to success. He presents entrepreneurship in terms of an economic model with elements for the individual, the firm, and the environment, each of which influence success. The ten individual dimensions involve: aggressive achievement orientation, autonomy from the opinion of others, business uncertainty tolerance, goal oriented achievement, goal oriented autonomy, innovative behavior, opportunistic behavior, personal control, self-esteem and work related self-confidence. The four firm characteristics include: competitive attitude, strategic orientation, level of technology, and the utilization of networks for information exchange. Environmental influences are assessed on four dimensions: turbulence, hostility, complexity and munificence. Using this model, Solymossy conducted research with 370 entrepreneurs and found that success had two distinct dimensions: economic success and satisfaction. Further, economic success and satisfaction were affected uniquely by different combinations of variables.

Of particular interest to the present study were the individual attitudes found to be significantly related to success in terms of satisfaction and income. The satisfied entrepreneurs demonstrated aggressive achievement orientation, confidence in themselves and in their ability to control outcomes. The economically successful shared the attitudes of the satisfied entrepreneur and, in addition, exhibited higher levels of opportunistic behavior, uncertainty tolerance,

autonomy in their behavior toward their goals and from the opinion of others, aggressive achievement, and goal orientation.

In summary, the previous research on managerial and entrepreneurial career development identifies the following as relevant to career success: managerial competence (Schein, 1974); high achievement motivation and risk orientation (Tharenou, 1997; Solymossy, 1998); a readiness to take advantage of opportunities for success at work (Kotter, 1997); and exposure to career enhancing experiences, such as major organizational assignments and engagement in high visibility projects (Tharenou, 1997).

Predictors of Career Success

Several other studies investigated relationships between individual variables and career success. These variables may be grouped in the following categories: personal background characteristics; career experiences; career opportunities and strategies; and attitudes/personality characteristics. The personal background variables include demographic characteristics, family background, academic ability and achievement.

Demographic Characteristics. In their study of corporate managers, Gattiker and Larwood (1987) found demographics to be the best predictors of career success and mobility. Respondents' age, years in career, education and number of children correlated positively while marital status correlated negatively with career success.

Cox and Harquail (1991) identified gender as a significant factor in explaining variation in the early career paths and successes of male and female MBA's. Women experienced lower salary increases, fewer management promotions and lower hierarchical levels compared to men of similar education, age, experience, performance and career paths. This research showed that being female had a negative effect on career success. Similarly, Tharenou (1997) found that

females face more difficulties than males in career advancement. Male managerial hierarchies reduce women's managerial advancement. Further, promotion often results in female managers gaining lower managerial levels than male managers.

Tharenou (1997) also identified education as relevant to career advancement. A bachelor's degree was related positively to manager's level and pay, but not promotion, while a master's degree was related positively only to manager's pay and the Ph.D. was related negatively to managerial advancement. Previously, Gould and Penley (1984) reported that the demographic variables of age and education were significant predictors of salary progression; the R^2 of .145 for age and education was the highest in their predictor set.

Family Background. Both Tharenou (1997) and Gattiker and Larwood (1987) discovered that marriage increases career success. However, while Gattiker and Larwood (1987) found a correlation between number of children and success, Tharenou (1997) determined that the number or care of children was not related to managerial promotions, level or pay. Regarding the impact of marriage and children on women's career advancement, Tharenou concluded that while marriage and children do not decrease managerial advancement, they may reduce processes leading to it.

Academic Ability and Achievement. Judge et al. (1991) confirmed that mental ability positively predicted extrinsic career success, and Tharenou (1997) found that general cognitive ability - how much and how quickly a person learns - predicted long-term managerial career advancement from entry. With regard to academic achievement, Harrell (1969) and Harrell and Alpert (1989) identified second year MBA grades as significantly related to career success, but found no correlation between overall grades and career success.

Career Strategies

Results vary with regard to the influence of career strategies on career success. Based on a study with clerical, professional and managerial employees of a municipal bureaucracy, Gould and Penley (1984) found that the following specific career strategies were related to career success: opinion conformity, enhancement of one's superior (for non-managers only), creating opportunities, and extended work involvement. Tharenou (1997) determined that such strategies as having a mentor, developing an informal social network, obtaining career support, and using political influence positively affected managerial career advancement. In contrast, Gattiker and Larwood (1987) reported no relationship between career strategies and success. Comparative analysis of these studies suggests that the difference in findings may be due primarily to the operational definition of career strategy.

Attitudes/Personality Characteristics.

Attitude toward Career. Carson and Bedeian (1994) developed a career commitment measure relevant to research on career success. The measure is comprised of three dimensions: career identity, career planning, and career resilience. Field tests with 476 respondents detected differences in the career commitment levels associated with varying degrees of professionalism across occupational groups. Subsequently, Carson and Carson (1998) used an abbreviated version of this measure to investigate the relationships between career commitment with emotional intelligence, organizational citizenship behavior and organizational commitment. Results identified emotional intelligence as an antecedent and organizational commitment and organizational citizenship as outcomes of career commitment. One implication from this research is that by fostering an individual's career development, employers can also promote

commitment to the organization and increase organizational citizenship behavior. The present study used Carson and Bedeian's (1994) instrument to measure career commitment.

Personality Characteristics. Research over the last several decades has established personality characteristics as significant factors in understanding career success. In his early research with MBA alumni from Stanford University, Harrell (1969) found that higher earning MBA's were overwhelmingly in the socially desirable direction on personality measures. They were self-confident, ascendant or socially bold, and showed high energy as well as commitment to longer hours of work. Later results, from a twenty-year longitudinal study of Stanford University MBA's, reconfirmed the importance of social extroversion as the most valid predictor of success in terms of earnings (Harrell & Alpert, 1989). Judge et al. (1999) provide further confirmation of the importance of personality traits to career success. With intergenerational, longitudinal data, they determined that personality characteristics were significant predictors of career success over a 50 year span. More specifically, high extroversion, high conscientiousness, low neuroticism and low agreeableness correlated positively with extrinsic career success, and high conscientiousness correlated positively with intrinsic career success.

Consistent with Kotter (1995) and Tharenou (1997), several empirical studies confirm two major personality constructs - risk orientation and achievement motivation - as significant predictors of career success. Based on a study of more than 500 top-level business executives, MacCrimmon and Wehrung (1990) determined that the most successful executives were the biggest risk-takers. Similarly, Sagie and Elizur (1999) found significant differences between students with high and low entrepreneurial orientation on four achievement traits: readiness to face uncertainty, calculating risk, undertaking personal responsibility, and solving problems. Solymossy (1998) also identified risk orientation and achievement motivation as significant to the

success of entrepreneurs. He found that the economically successful exhibited higher levels of opportunistic behavior and uncertainty, were more autonomous, showed higher levels of aggressive achievement and were more goal oriented.

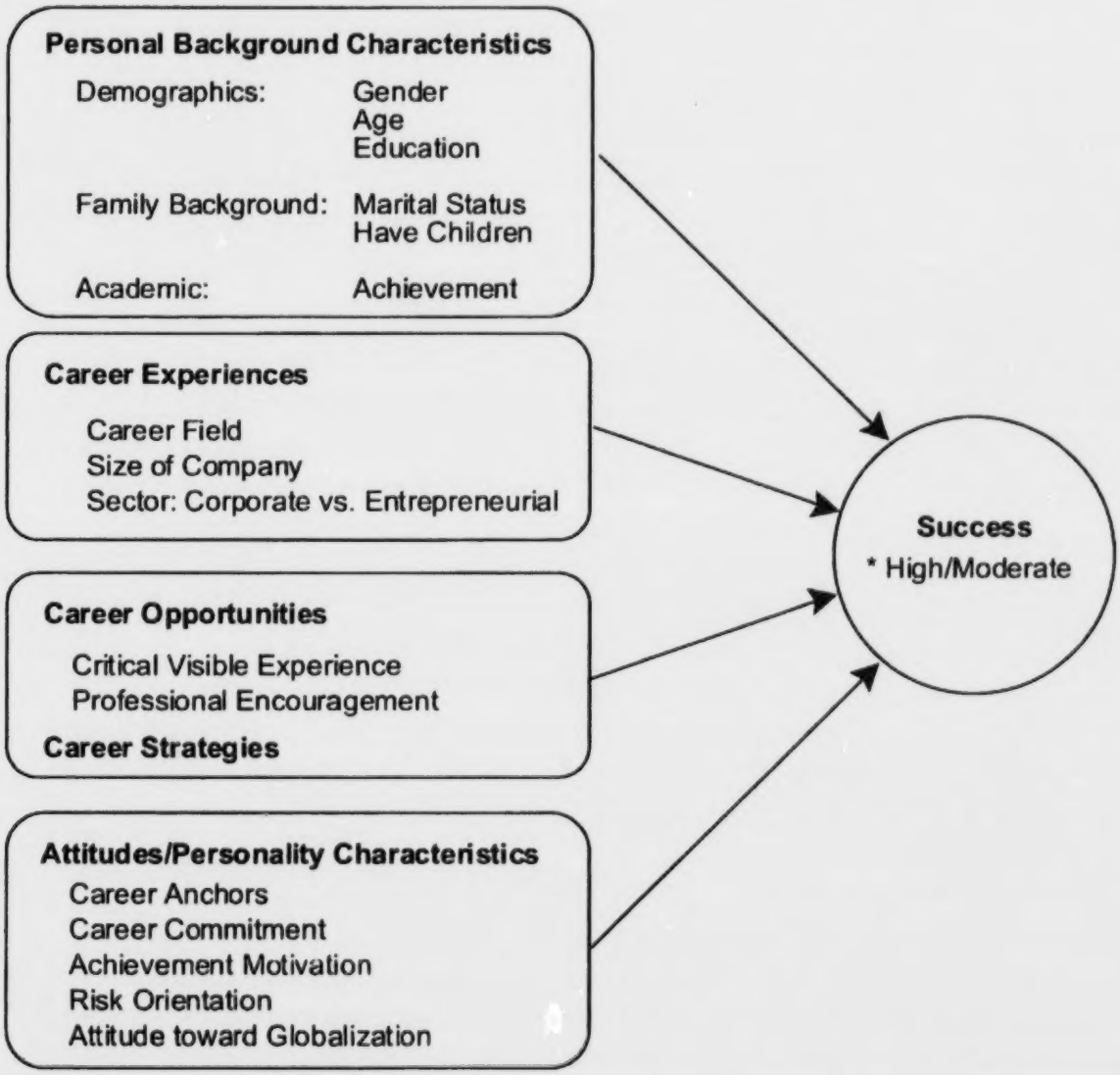
Research Model

The research cited in the previous review of the literature provided a basis for developing the research model for the present study. As shown in Figure 1, the model consists of four groups of independent variables predicting success: personal background characteristics; career experiences; career opportunities and strategies; and attitudes/personality characteristics.

Personal Background Characteristics. As noted in the literature review, Gattiker and Larwood (1987) identified demographic variables as the best predictors of career success and mobility. The model for this study included the following demographic variables identified as significant predictors of success in previous studies: gender (Cox & Harquail, 1991; Tharenou, 1997); age (Gould & Penley, 1984; Gattiker & Larwood, 1987); marital status (Gattiker & Larwood, 1987; Tharenou, 1997); having children (Gattiker & Larwood, 1987); and education (Gould & Penley, 1984; Gattiker & Larwood, 1987; and Tharenou, 1997). Although previous studies (Harrell, 1969; and Harrell & Alpert, 1989) identified only second year MBA grades as significantly related to career success, this study included a more general measure of academic achievement, average grades in college, as a potential predictor of career success.

Career Experiences. This research model incorporated aspects of career experience previously found to be related to career success: career field, size of company, and work sector - corporate versus entrepreneurial. Kotter (1995) found small size and entrepreneurial orientation to be related to career success.

Figure 1: Predicting Alumnae/i Career Success



* High Success: Senior Management or: 1976 alumnae/i ≥ $200,000; 1996 MBA ≥ $125,000; 1996 Undergraduate ≥ $60,000

Career Opportunities. Tharenou (1997) identified several career opportunities as significantly related to managerial advancement. Based on this research, the present model included two categories of career opportunity variables: critical visible experiences and professional encouragement.

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Career Strategies. The model also incorporated career strategies as a potential predictor of career success. As noted previously, results from previous research vary with regard to the influence of career strategies on career success. While Gattiker and Larwood (1987) found no relationship, Gould and Penley (1984) and Tharenou (1997) identified a significant relationship between career strategies and career success.

Attitudinal and Personality Characteristics. This segment of the model incorporates attitudes and personality characteristics found to be related to career success. The attitudinal constructs comprise: career anchors, career commitment, and attitude toward globalization. A five-item question was created to reflect Schein's (1974) five anchors: 1) managerial competence, (2) technical/functional competence, (3) organizational security, (4) creativity, and (5) autonomy. A slightly modified version of Carson and Bedeian's (1994) measure was used to determine career commitment and a series of statements were created to measure attitude toward globalization, which Kotter (1995) found to be related to career success. The specific items in these scales are described later in the methodology section. The two personality constructs in the model are: risk orientation (Kotter, 1995; Solymossy, 1998; MacCrimmon & Wehrung, 1990; and Sagie & Elizur, 1999), and achievement motivation (Kotter, 1995; Solymossy, 1998; and Tharenou, 1997).

Success. A primary purpose of this study was to discover how the most accomplished alumnae/i achieved their success. Income was considered a major component of success. However, since many study participants did not provide income data, the criteria for defining success were expanded to include level of responsibility as well as income.

Based on income and level of position, study participants were classified into two groups: 'highly' and 'moderately' successful alumnae/i. Alumnae/i classified as 'highly' successful

included those whose most recent positions were in senior management or who reported the following incomes for 1999: $200,000 or more for 1976 alumnae/i; $60,000 or more for 1996 undergraduate alumnae/i; and $125, 000 or more for 1996 MBA alumnae/i.

Methodology

Data Source. Data were collected by means of a mailed questionnaire sent to 1976 and 1996 undergraduate and graduate alumnae/i. Results are based on responses from 336 alumnae/i. The total study participants include: 49 Class of 1976 undergraduate alumnae/i, 85 Class of 1976 MBA alumnae/i, 101 Class of 1996 undergraduate alumnae/i, and 101 Class of 1996 MBA alumnae/i. Of the 336 study participants, 51 percent were classified as 'highly' successful.

Survey Instrument. Based on the review of the literature and consultation with alumnae/i office staff, the author designed the instrument for the present study. It included five major sections on: alumnae/i career paths, career opportunities, career challenges and successes, personal attitudes and values, and selected background information.

The first section on career paths solicited information on the career field, level of responsibility, type of industry and size of company in which alumnae/i had worked; the number of different positions and employers they had since graduation; and their level of satisfaction with various aspects of their career development and with their first and current positions. In addition, respondents were asked to comment on how their views had changed since graduation regarding their values, career goals and the meaning of success.

The second section on career opportunities requested information on the types of career experiences alumnae/i had in entrepreneurship as well as in the corporate sector; explored whether or not they followed specific career strategies; and addressed the extent to which alumnae/i had the types of career opportunities previously identified as predictors of managerial

career advancement. In the third section, alumnae/i were asked the degree to which they encountered specific challenges in the workplace and to comment on the major successes of their career.

The fourth section concentrated on personal attitudes identified in the literature as relevant to career success, including achievement motivation, risk orientation; career commitment; and the concept of career anchors. Finally, the fifth section requested background information on respondents' family background, demographic characteristics, academic performance, educational attainment, and income in the previous year and in the first year after graduation.

While most of the survey consisted of structured questions with pre-determined responses, open-ended questions were also included seeking alumnae/i comments regarding their career experiences, the extent to which their education contributed to their success, and how the educational program might be improved to better prepare future students for career success.

Methods of Analysis. Bivariate techniques - Chi-Square and t tests - were used to determine if there were significant relationships between alumnae/i demographic, academic, and personality characteristics; career choices, career opportunities and success. Discriminant analysis was used to identify the most significant predictors of success. Analyses were conducted with individual items and computed scales.

Scale development. Based on factor analyses, several scales were created measuring career commitment, career opportunities experienced, and attitude toward globalization. Table 1A presents the names and statistical properties of these scales, and Table 1B identifies the items comprising each scale. As shown, the reliability coefficients range from .70 to .85.

Table 1A. Statistical Properties of the Scales

Scales	Mean	Standard Dev.	Reliability	No. of Items	Range of Responses
Career Commitment					
Personal Investment in Career	3.56	.89	.84	4	1-5
No Career Plan or Strategy	2.30	.78	.78	4	1-5
Perceived Career Costs	2.58	.99	.85	3	1-5
Career Opportunities					
Critical/Visible Experience	3.34	.55	.78	6	1-4
Professional Encouragement	3.29	.61	.70	2	1-4
Attitude Toward Globalization	3.68	.88	.80	3	1-5

Table 1B. Questionnaire Items Comprising the Scales

Career Commitment

Personal Investment in Career

- My career is an important part of who I am
- This career field has a great deal of personal meaning to me.
- I do not feel emotionally attached to this career field. *
- I strongly identify with my chosen career field.

No Career Plan or Strategy

- I do not have a strategy for achieving my goals in this career field.
- I have created a plan for my development in this career field. *
- I do not identify specific goals for my development in this career field.
- I do not often think about my personal development in this career field.

Perceived Career Costs

- Given the problems, I sometimes wonder if I get enough out of this career field.
- I sometimes wonder if the personal burden of this career field is worth it.
- The discomforts associated with my field sometimes seem too great.

Response Scale: 1 'Strongly Disagree' to 5 'Strongly Agree'

Career Opportunities

Critical Visible Experience

- Breadth of experience in several functional areas
- Broad management experience
- Experience in high visibility projects
- Experience in negotiating business deals
- Responsibility for major organizational assignments
- Successful performance on a critical project

Professional Encouragement

- Encouragement from colleagues
- Encouragement from supervisors

Response Scale: 1 'Not at All' to 4 'Very Much'

Attitude Toward Globalization

- Changes in the international economy have very little effect on my business. *
- Events in other parts of the world make very little difference in my business. *
- What is happening in the world economy seems remote from everyday business. *

Response Scale: 1 'Strongly Disagree' to 5 'Strongly Agree'

* These items were reverse coded for the creation of the scale.

Results

This section presents results from bivariate and multivariate analyses testing the relationships, hypothesized in the research model, between career success and personal background characteristics, career experiences, career opportunities and strategies, and attitudes/personality characteristics. Results are based on analyses with items and scales.

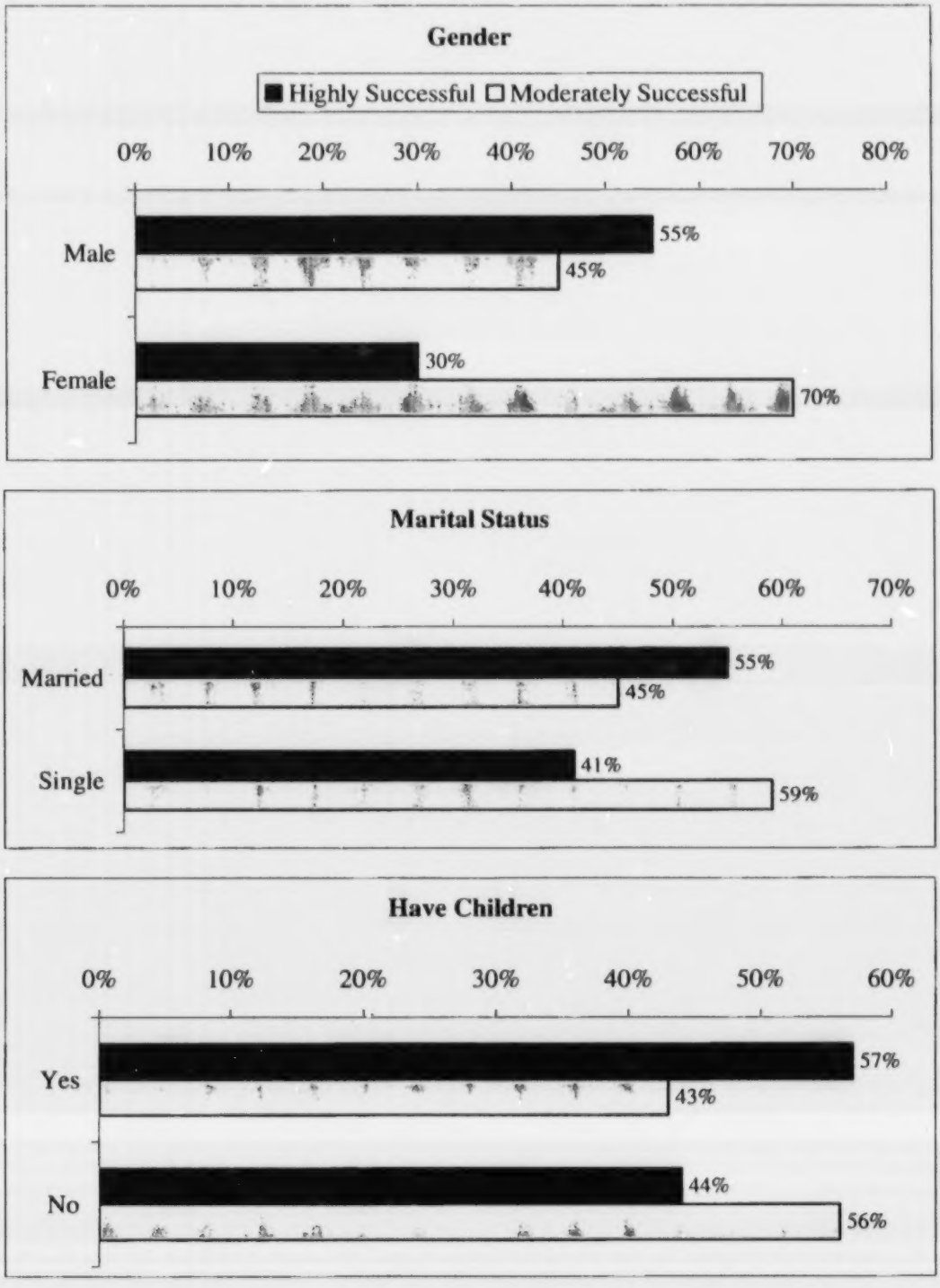
Relationships between Personal Background Characteristics and Career Success

Demographic Characteristics. Results revealed several statistically significant relationships between selected demographic characteristics and career success. Correlation analysis showed a small, statistically significant relationship between age and success ($r = .15$, $p \leq .05$). Further, a substantial, statistically significant difference was found between success and male gender ($X^2 = 13.16$, $p \leq .001$). A significantly higher percent, 55 percent of the males, compared with only 30 percent of the females, were classified as 'highly' successful. No statistically significant relationship was found between educational attainment and career success. The success breakdown was approximately even among those earning a bachelor's and master's degree.

Family Background. Marital status was also significantly related to success ($X^2 = 5.17$, $p < .05$). Some 55 percent of those currently or previously married, compared with only 41 percent of those who were single, were classified as 'highly' successful. Having children was also significantly related to success ($X^2 = 5.25$, $p \leq .05$). Fifty-seven percent of those who had children, compared with 44 percent of those who did not have children, were classified as 'highly' successful. Further analysis revealed no significant interaction effect by gender between marital status, having children and success.

These differences by demographic characteristics and family background are graphically displayed in Figure 2.

Figure 2.
Significant Relationships Between Demographic Characteristics and Alumnae/i Success



Academic Achievement. No statistically significant relationship was found between average grade in college and career success; 51 percent of those earning A's or B's, compared with a slightly lower 44 percent among those earning an average grade of C, in college were classified as 'highly' successful.

Relationship between Career Experiences and Career Success

In terms of career experiences, results revealed statistically significant relationships between career field ($X^2 = 28.21$, $p \leq .001$), size of company of most recent position ($X^2 = 15.85$, $p \leq .01$), level of responsibility of first position ($X^2 = 16.71$, $p \leq .01$) and career success. As shown in Figure 3, the most notable difference in career field is the greater percent of 'highly' successful alumnae/i among those who most recently held *entrepreneurial* and *management* positions. Some 79 percent of those reporting an entrepreneurial position and 68 percent of those reporting a management position, compared with less than 50 percent in all other areas, are classified as 'highly' successful. These results are clearly related to the criteria for defining success which include income and holding a senior management position.

Small size of the company also appears to be related to success. Sixty-six percent of those whose most recent company employed 1 to 100 employees, compared with 35 to 55 percent among those working at larger companies, are classified as 'highly' successful. Also, level of responsibility of one's first position appears to be related to success status. Some 76 percent of those who reported senior management as the level of their first position, compared with 59 percent or less among those beginning at lower levels, are classified as 'highly' successful.

Figure 3. Significant Differences in the Career Choices

Between 'Highly' and 'Moderately' Successful Alumnae/i

Entrepreneurial Experience. Of the 336 alumnae/i participating in this study, 25 percent reported they owned and ran a business as a primary job after earning their degree. Further analysis revealed a statistically significant positive relationship between entrepreneurial experience and success ($X^2 = 12.26$, $p \leq .001$). Sixty-seven percent of the entrepreneurs, compared with only 45 percent of the non-entrepreneurs, were classified as 'highly' successful.

Alumnae/i entrepreneurs also commented on the challenges and rewards of their experience. They most frequently reported challenges involving *management of people*, *financial management*, *technological innovation*, and *keeping up with the competition*. However, the compensating rewards were *independence*, *strong self-satisfaction*, *personal growth* and *recognition*. Overall, the message from alumnae/i with entrepreneurial experience was that the rewards far outweighed the challenges.

Corporate Experience. The vast majority, 77 percent, of the alumnae/i participating in this study reported they had worked for a large business or corporation since graduation. Chi-Square analysis revealed a statistically significant relationship between corporate experience and success ($X^2 = 6.95$, $p \leq .01$). In contrast with findings associated with entrepreneurial experience, those with corporate experience were less likely to be classified as 'highly' successful. Only 47 percent of those who reported they had worked for a large business or corporation, compared with 64 percent of those who reported they had not worked for a corporation, were classified as 'highly' successful in this study. However, this finding may be due to the definition of success which included senior management as one of the criteria. Entrepreneurs would more likely hold senior management positions in their companies.

Relationship between Career Opportunities, Strategies and Career Success

Career Opportunities. Previous research (Tharenou, 1997) identified specific career opportunities related to managerial career advancement. Such opportunities include successful performance in critical functional areas, experience in high visibility projects, and experience in corporate headquarters. Participants in this study were asked to what extent they had these types of experiences during the course of their career, and t tests examined the degree to which these experiences were correlated with success.

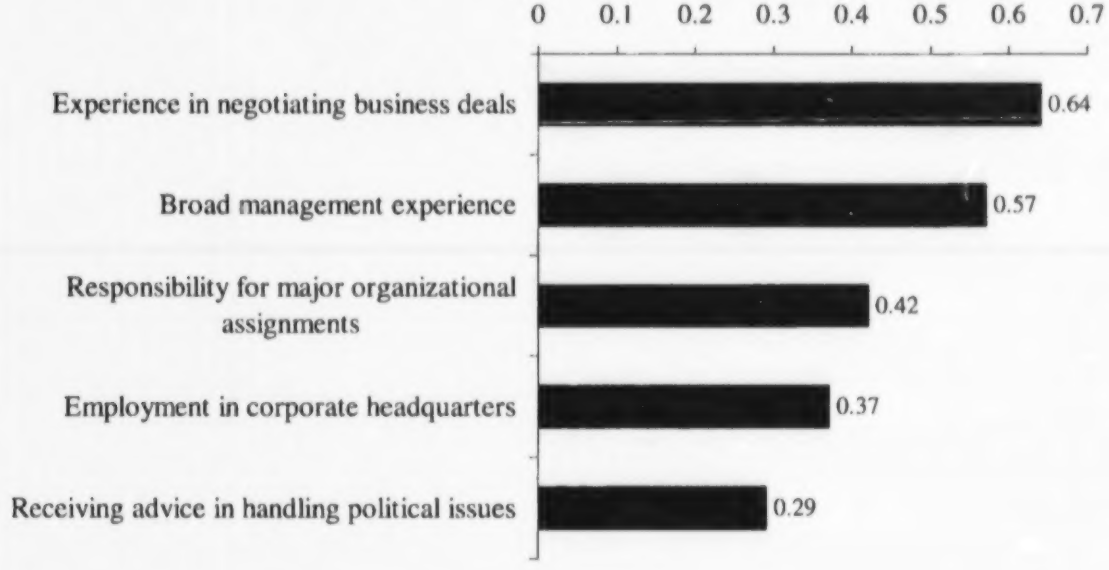
As shown in Table 5, 'highly' and 'moderately' successful alumnae/i differed significantly on eight of the 13 career opportunities specified in the survey. The differences between the two groups on selected experiences are graphically illustrated in Figure 4. Most notably, 'highly' successful alumnae/i report more extensive experience in negotiating business deals, broad management experience, and responsibility for major organizational assignments. In addition, 'highly' successful alumnae/i report significantly higher employment in corporate headquarters, breadth of experience in several functional areas, experience in high visibility projects, successful performance on a critical project as well as more experience in receiving advice in handling political issues.

Table 5
Statistically Significant Differences in Career Opportunities Between 'Highly' and 'Moderately' Successful Alumnae/i

Career Opportunities	Highly Successful	Moderately Successful	Mean Difference	t Ratio
Experience in negotiating business deals	3.43	2.79	.64	6.16***
Broad management experience	3.48	2.91	.57	6.37***
Responsibility for major organizational assignments	3.43	3.01	.42	4.68***
Employment in corporate headquarters	3.23	2.86	.37	2.78**
Receiving advice in handling political issues	2.74	2.45	.29	2.45*
Breadth of experience in several functional areas	3.52	3.27	.25	2.94**
Experience in high visibility projects	3.58	3.33	.25	3.15**
Successful performance on a critical project	3.78	3.58	.20	3.32***

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Figure 4. Significant Mean Differences in Selected Career Opportunities Between 'Highly' and 'Moderately' Successful Alumnae/i



As shown in Table 6, t test analyses identified a statistically significant relationship between the *Critical Visible Experience* scale and career success. This scale reflects an individual's mean score on the following items: breadth of experience in several functional areas, broad management experience, experience in high visibility projects, negotiating business deals, major organizational assignments and successful performance on a critical project. The 'highly' successful mean of 3.54 is close to a response of 4 indicating 'highly' successful alumnae/i had such experience 'very much'. In comparison, the 'moderately' successful alumnae/i report a mean close to 3 indicating that 'moderately' successful alumnae/i had this critical visible experience only 'somewhat' in the organizations for which they worked.

Table 6
Significant Differences in Critical Visible Career Experience
Between 'Highly' and 'Moderately' Successful Alumnae/i

Scale	Highly Successful	Moderately Successful	Mean Difference	t Ratio
Critical Visible Experience	3.54	3.14	0.40	6.96***

*** $p \leq .001$

Career Strategies. The majority of alumnae/i, 56 percent, reported they had developed and followed specific strategies to ensure their career success. In discussing their strategies, alumnae/i highlighted the following themes: work hard and persevere; continually strive to learn; seek multifunctional experience; develop good relationships; create plans with definite goals; and be true to one's values.

Relationship between Attitudes/Personality Characteristics and Career Success

To further investigate findings from previous research on career development, this study explored relationships between career success and respondents' attitudes, particularly with regard to attitude toward one's career, career commitment, achievement motivation, risk orientation, and attitude toward globalization.

Attitude Toward One's Career. Statistically significant differences were found between emotional attachment to one's career, having a strategy for one's career development and alumnae/i success status. 'Highly' successful alumnae/i were significantly more likely to disagree with the following statements: "I do not feel emotionally attached to this career field" ($t = 2.14$, $p \leq .05$); and "I do not have a strategy for my development in this career field" ($t = 2.43$, $p \leq .05$). These results indicate that 'highly' successful alumnae/i are emotionally attached to their career field and have a strategy for achieving their career goals.

Table 2
Significant Differences in Career Attitudes
Between 'Highly' and 'Moderately' Successful Alumnae/i

Career Attitudes	Highly Successful	Moderately Successful	Mean Difference	t Ratio
Not emotionally attached to career field	2.46	2.73	-.27	2.14*
No strategy for achieving goals	2.09	2.36	-.27	2.43*

* $p \leq .05$

Table 3 presents results from t test analyses examining differences between 'highly' successful and 'moderately' successful alumnae/i on three career attitude scales. As shown, the 'highly' successful alumnae/i mean is significantly higher on the *personal investment in career scale* and lower, though not statistically significant on the other two scales: *no career plan or strategy* and *perceived career costs*. The significant difference on the *personal investment in*

career scale indicates that 'highly' successful alumnae/i consider their career field as an important part of who they are. It has a great deal of personal meaning to them. They feel emotionally attached and strongly identify with their career field. The lack of significance on the career strategy scale may be due to the measure, which had only a moderate reliability of .78.

Table 3
Mean Differences on Career Commitment Scales
Between 'Highly' and 'Moderately' Successful Alumnae/i

Career Commitment Scales	Highly Successful	Moderately Successful	Mean Difference	t Ratio
Personal Investment in Career	3.66	3.46	.20	2.03*
No Career Plan or Strategy	2.26	2.34	-.08	n.s
Perceived Career Costs	2.56	2.60	-.04	n.s

* $p \leq .05$

Personality Characteristics. As shown in Table 4, statistically significant differences were found between 'highly' and 'moderately' successful alumnae/i on two personality characteristics: achievement motivation and risk orientation. 'Highly' successful alumnae/i report significantly stronger agreement with the statement, "I enjoy the uncertainty and risks of business". In contrast, 'moderately' successful alumnae/i report significantly stronger agreement with statements claiming they seldom get a sense of pride from their work; their goals are generally modest; and they need to know something has been done before they are willing to try it. Agreement with these statements indicates a lower level of achievement motivation and risk orientation.

Table 4
Significant Differences in Achievement Motivation and Risk Orientation Between 'Highly' and 'Moderately' Successful Alumnae/i

Attitude Statement	Highly Successful	Moderately Successful	Mean Difference	t Ratio
I enjoy the uncertainty and risks of business.	3.71	3.23	.48	4.37***
My goals and ambitions are generally modest and easily achieved.	2.03	2.38	-.35	-3.50***
I seldom get a sense of pride and accomplishment from my work.	1.82	2.06	-.24	-2.48*
I need to know that it's already been done before I'm willing to try it.	1.71	1.94	-.23	-2.83**

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Other Attitudes. A series of attitude statements regarding openness to career change, globalization, and intellectual and cultural interests were also included in the survey. Statistically significant differences were found between 'highly' and 'moderately' successful alumnae/i on two items involving attitudes toward globalization and attendance at cultural events. 'Highly' successful alumnae/i were more aware of globalization, but had less time to attend cultural events. 'Highly' successful alumnae/i were significantly less likely to agree with the statement, "Changes in the international economy have very little affect on my business" ($t = -2.08$, $p \leq .05$). However, they were significantly more likely to agree with the statement, "The pressure of work doesn't leave much time to attend concerts or plays" ($t = 2.02$, $p \leq .05$).

Predicting Alumnae/i Success Status

Discriminant analysis was employed to test a model predicting alumnae/i success status. The model included demographic characteristics, career experiences, strategies and opportunities, personality characteristics, satisfaction with career experiences, and cohort.

Table 9 presents the results from the discriminant analysis. The discriminant function coefficients indicate the relative weights for each variable found to be a significant predictor of alumnae/i success status. These results are based on analyses of 272 cases. This discriminant function model, including 11 variables, accurately predicted the success status of 78 percent of the 272 alumnae/i respondents. The canonical correlation of .51 indicates that this function explains 26 percent of the variance in alumnae/i success status.

As shown in Table 9, gender is the single demographic characteristic included in the model. The negative coefficient indicates that males are more likely to be classified as 'highly' successful. Success is also determined by one's career experiences and strategies. Those who held higher levels of responsibility in their first position as well as those who recently worked for a smaller company were more likely to achieve success. Alumnae/i who developed and followed specific strategies were also more likely to achieve success.

These data confirm previous research findings linking certain career opportunities with success. Alumnae/i who had broad management experience, experience in negotiating business deals, and successful performance on a critical project were more likely to be classified as 'highly' successful.

Personality characteristics that significantly predict success include risk orientation and achievement motivation. As indicated by the coefficient of .26, risk orientation is clearly the stronger predictor of success. Alumnae/i who report that they enjoy the uncertainty and risks of

business are significantly more likely to be classified as 'highly' successful. Those whose goals and ambitions are not modest are also more likely to be classified as 'highly' successful.

These results also document relationships between cohort, satisfaction with first job and success. Undergraduate alumnae/i from the Class of 1976 and those who were satisfied with their first position were more likely to be 'highly' successful. The cohort effect may reflect the fact that this group had more time to achieve success. It may also indicate that the income criteria used to define success may not have been comparable among the four cohorts.

In summary, these results from discriminant analysis indicate that male alumnae/i, who held higher levels of responsibility in their first position; who eventually worked for a small company; who developed and followed career strategies; who had the following career opportunities - broad management experience, negotiate business deals and successful performance on a critical project; who had high risk orientation and achievement motivation; and who were satisfied with their first position had a high potential for success in their careers.

Table 9
Discriminant Analysis Results: Predicting Alumnae/i Success Status

Predictors	Standardized Discriminant Function Coefficients	Percent Correctly Classified
Demographic Characteristics		78%
Gender	-.26	
Career Experiences		
Size of most recent company	-.24	
Level of responsibility of first job	.28	
Career Strategies	.05	
Career Opportunities		
Broad management experience	.28	
Experience in negotiating business deals	.29	
Success on critical project	.10	
Personality Characteristics		
Enjoy uncertainty and risks of business	.26	
Goals and ambitions not modest	.19	
Satisfaction with Career Experience		
Satisfaction with first position	.22	
Alumnae/i Class		
1976 Undergraduate Class	.27	
Canonical Correlation	.51	

X^2 =80.16; 11 df; $p \leq .001$

Discussion

The following discussion highlights the extent to which the results from this study confirm the proposed research model and the degree to which these findings validate results from previous studies on career success.

Personal Background Characteristics. Similar to findings of Cox and Harquail (1991) and Tharenou (1997), this study found a significant relationship between male gender and success. Also, similar to Gould and Penley (1984) and Gattiker and Larwood (1987), the study identified a significant correlation between age and success. Consistent with Gattiker and Larwood's (1987) and Tharenou's (1997) findings, this study identified a positive relationship between being married and achieving career success. Also similar to Gattiker and Larwood (1987), but in contrast to Tharenou (1997), who reported no relationship, this study documented a significant relationship between having children and success.

Results from this study revealed no statistically significant relationship between educational attainment and career success. In contrast, Gould and Penley (1984) and Tharenou (1997), respectively, had identified education as a significant predictor of salary progression and career advancement. With regard to academic achievement, this study identified no significant relationship between overall grades in college, and career success. In their research, Harrell and Alpert (1989) found Harvard and Stanford MBA students' second year grades - but not first year grades or total GPA - to be correlated with earnings.

In summary, this study determined significant relationships between career success and four of the six personal background characteristics specified in the model: gender, age, marital status, and having children. No significant relationship was found between career success and education or academic achievement.

Career Experiences. Similar to Kotter (1995), this study documented significant, positive relationships between small size of company, entrepreneurial employment and career success. Consistent with Schein's (1974) finding, the study also documented a significant relationship between success and career field, specifically managerial and entrepreneurial fields. Thus, the study confirmed the significance of the three career experience variables specified in the model: career field, size of company and sector of employment. In addition, this study discovered that higher level of responsibility and satisfaction with one's first position correlated with success.

Career Opportunities. Findings from this study confirm Tharenou's (1997) research positing significant relationships between career success and the following career opportunities: negotiating business deals, broad management experience, responsibility for major organizational assignments, employment in corporate headquarters, receiving advice in handling political issues, breadth of experience in several functional areas, experience in high visibility projects, and successful performance on a critical project. In contrast, no significant relationships were found between success and assistance from informal social networks; beneficial training and development programs; encouragement from colleagues; encouragement from supervisors; and guidance from a mentor.

It is interesting to note that all but one of the experiences associated with success related directly to work; the one exception was receiving advice in handling political issues. In general, the interpersonal and social experiences did not relate significantly to the external measure of success used in this study. Further of the two scales created to measure career opportunities, only the critical visible experience scale related significantly to career success. No significant relationship was found between the professional encouragement scale and career success.

Career Strategies. The majority of participants in this study reported they had developed and followed specific strategies to ensure their career success. While statistical analyses showed either a small or no statistically significant relationship between having a strategy and career success, this may be due to limitations of the measures employed in the study. Previously, Gould and Penley (1984) and Tharenou (1997) had identified specific career strategies as significantly related to success.

. Attitudes/Personality Characteristics. Results from this study revealed a statistically significant relationship between career success and personal investment in one's career - one of the three dimensions in Carson and Bedeian's (1994) career commitment measure. However, no significant relationship was found between career success and the other two scales: no career plan or strategy and perceived career costs. Also, no significant relationship was found between success and the attitude statements designed to reflect Schein's (1974) career anchors. However, the absence of a relationship may be due to the limitations of the measure or the homogeneity of the study population, all business school alumnae/i.

Significant relationships found between high achievement motivation, risk orientation and career success reconfirm findings from previous research (Kotter, 1995; Solymossy, 1998; and Tharenou, 1997), and the significant relationship between attitude toward globalization and success confirms Kotter's (1995) theory that a new rule of success is the ability to cope effectively with globalization.

Conclusion

Results from this study have significant implications for higher education. Findings identify personal attitudes, strategies, career experiences and opportunities that enhance an individual's potential for success. For business students, these factors include high risk orientation, high achievement motivation, a positive attitude toward globalization and opportunities to acquire broad management experience, negotiate business deals, and achieve success on a critical project. Based on these findings, the College should design programs to develop attitudes correlated with success and encourage students to seek the types of career opportunities found to enhance success. Thus, the study demonstrates how alumnae/i research may be used to enhance higher education's effectiveness in preparing students for success in their career. Finally, the research model provides a framework for designing alumnae/i studies and identifying predictors of success among graduates in other professional fields.

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